

CLAIMS

1. A diagnostic ultrasound system comprising:
  - a probe for measuring a subject using ultrasound by
  - 5 bringing said probe into contact with a subject in a first state;
  - a first image production means for producing a first image of said subject according to information sent from said probe;
  - 10 an image display means for displaying said first image produced by said first image production means;
  - a means for setting at least one piece of reference information on said first image displayed by said image display means;
  - 15 a second image production means for producing a second image of said subject according to information measured by bringing the probe into contact with said subject in a second state different from said first state;
  - a variation operation means for calculating a change of
  - 20 said reference information, which is set on said first image by said setting means, into a counterpart visualized in said second image;
  - a distortion operation means for calculating distortion information on a desired region-of-interest in said second
  - 25 image according to said change calculated by said variation

operation means; and

a display control means for controlling the display of the distortion information, which is calculated by said distortion operating means, on said image display means.

5 2. A diagnostic ultrasound system according to Claim 1, wherein said variation operation means calculates a locus of points starting with the point of the reference information set on said first image and ending with the point of the reference information in said second image, and said display 10 control means controls the display of the calculated locus on said image display means.

15 3. A diagnostic ultrasound system according to Claim 1, wherein said variation operation means calculates a change of said desired region-of-interest set on said second image, and said display control means controls the display of the calculated change of said region-of-interest, on said image display means.

20 4. A diagnostic ultrasound system according to Claim 3, further comprising a region-of-interest setting means for setting a desired region-of-interest on said first image, wherein a change of the region-of-interest delineated in said first image into a counterpart visualized in said second image is calculated and displayed on said image display means.

25 5. A diagnostic ultrasound system according to Claim 1,

wherein said reference information set by said setting means is visualized in said first image to be located at the deepest point from the vicinity of said probe.

6. A diagnostic ultrasound system according to Claim 1,  
5 wherein said reference information inputted by said setting means is automatically set in a predetermined portion of said first image.

7. A diagnostic ultrasound system according to Claim 1,  
wherein said display control means displays an image of said 10 desired region-of-interest on said image display means in a different display form, that is, in a different color or shape.

8. A diagnostic ultrasound system according to Claim 1,  
wherein said setting means set said reference information on 15 said first image displayed by said image display means.

9. A diagnostic ultrasound system according to Claim 1,  
further comprising a graph production means for producing a graph indicating the relationship between at least one of statistics including an instantaneous value of a 20 displacement relative to a region in contact with said probe, a cumulative value of displacements, and an average of displacements, and at least one of statistics including a displacement relative to a region-of-interest, wherein  
said display control means displays the graph, which is 25 produced by said graph production means, on said image

display means.

10. A diagnostic ultrasound system according to Claim 1, further comprising a character string production means for producing a character string, which represents a numerical 5 value of at least one of statistics including an instantaneous value of a displacement relative to region-of-interest in said subject, a cumulative value of displacements, and an average of displacements, wherein said display control means displays the character string, which 10 is produced by said character string production means, on said image display means.

11. A method for displaying information on distortion of biological tissue in ultrasonic image, comprising:

a first image production step for measuring a subject 15 using ultrasound by bring a probe into contact with a subject in a first state, and producing a first image of said subject according to the measurement information;

an image display step for displaying said first image produced at said first image production step;

20 a step for setting at least one reference information by delineating it in said first image displayed at said image display step;

a second image production step for measuring a subject using ultrasound by bring said probe into contact with said 25 subject in a second state different from said first state,

and producing a second image of said subject according to the measurement information;

5 a variation operation step for calculating a change of said reference information, which is set on said first image at said setting step, into a counterpart visualized in said second image;

10 a distortion operation step for calculating distortion information on a desired region-of-interest, which is setting on said second image, according to the variation calculated at said variation operation step; and

a display control step for controlling the display of said distortion information, which is calculated at said distortion operation step, at said image display step.

12. A method of displaying distortion information on a 15 biological tissue together with an ultrasonic image according to Claim 11, wherein: at said variation operation step, a locus of points starting with the point of said reference information set on said first image and ending with the point of a counterpart visualized in said second 20 image is calculated; and at said display control step, the display of said calculated locus at said image display step is controlled.

13. A method of displaying distortion information on a biological tissue together with an ultrasonic image 25 according to Claim 11, wherein: at said variation operation

step, a change relative to said desired region-of-interest in said second image is calculated; and at said display control step, the display of the calculated change relative to said region-of-interest at said image display step is controlled.

14. A method of displaying distortion information on a biological tissue together with an ultrasonic image according to Claim 13, further comprising a step for setting a region-of-interest by delineating a desired region-of-interest in said first image, wherein a change is calculated and displayed; the change is that relative to said region-of-interest delineated in said first image into a counterpart visualized in said second image.

15. A method of displaying distortion information on a biological tissue together with an ultrasonic image according to Claim 11, wherein said reference information set at said setting step is visualized in said first image to be located at the deepest point from the vicinity of said probe.

20 16. A method of displaying distortion information on a biological tissue together with an ultrasonic image according to Claim 11, wherein said reference information set at said setting step is automatically delineated in a predetermined portion of said first image.

25 17. A method of displaying distortion information on a

biological tissue together with an ultrasonic image according to Claim 11, wherein at said display control step, an image of said desired region-of-interest is displayed in a different display form, that is, in a different color or  
5 shape.